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To: Local Health Departments
Regional Offices of the Division of Public Health
Tribal Health Clinics
Infection Control Professionals

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Subject: Surveillance for Arboviruses, including West Nile virus

Attached are the 2006 arbovirus surveillance guidelines, including those for West Nile virus (WNV). The case definitions for West Nile encephalitis and West Nile fever are the same as used in 2005. However, there are minor changes to the guidelines and updated (simplified) patient follow-up and lab submission forms. The WNV sick/dead bird reporting "hotline" (1-800-433-1610) will be activated as of May 1, 2006.

We have already had our first positive Dengue case in traveler returning from the Caribbean. Five Dengue cases were reported last year and we expect more this year. Follow-up is handled in the same as for other arboviruses, by completion of a CDES-103 follow-up form.

Due to changes in CDC protocols regarding the provision of reagents used for arboviral testing, it is possible that we may encounter a shortage of reagents used for arboviral testing at the Wisconsin State Laboratory of Hygiene. CDC is currently working to resolve this issue and I will send out further correspondence during the season if this affects our statewide arboviral surveillance activities.

Regarding how Asian highly pathogenic avian influenza H5N1 (hpAI) surveillance and/or detection will affect WNV bird surveillance activities in Wisconsin, at this point, WNV activities should not be affected until there is evidence of introduction of hpAI into the United States. Therefore, WNV bird surveillance will presently be conducted as in previous years. USDA, in cooperation with other agencies, is developing a protocol for hpAI surveillance and all hpAI inquiries should be handled as specified under this protocol, which should be released soon. Dead or sick birds may still be reported to the WNV dead/sick bird reporting hotline and will be handled appropriately by USDA staff.

The Wisconsin Division of Public Health WNV information web page containing to-date surveillance data and other resource material is the same as last season:
http://dhfs.wisconsin.gov/communicable/westNilevirus/

Please feel free to contact me at 608-267-9000 or at sotirmj@dhfs.state.wi.us if there are additional questions or concerns.

SURVEILLANCE FOR ARBOVIRUS INFECTIONS

Laboratory Testing Capability (Humans):

Available diagnostic tests at the Wisconsin State Laboratory of Hygiene (WSLH) include IgM capture enzyme immunoassays (IgM CEIA) that will identify IgM antibodies in serum and cerebrospinal fluid (CSF) specific to West Nile virus (WNV), La Crosse (LAC) encephalitis virus, Eastern Equine encephalitis (EEE) virus, and St. Louis encephalitis (SLE) virus. Clinicians should also consider enterovirus PCR and culture testing of the CSF (WSLH test code 1507 pcr). Enterovirus testing cannot be performed fee-exempt.

Confirmatory testing: In past years the Centers for Disease Control and Prevention (CDC) provided confirmatory testing of positive WNV tests. CDC will no longer accept WNV specimens for routine confirmation. The WSLH now has capabilities to confirm positive WNV test results through plaque-reduction neutralization testing (PRNT). The WSLH will perform confirmation testing using PRNT on a small sample of positive specimens, typically the first positives of the season, and those with unusual or equivocal results. The decision to perform confirmatory testing will require approval of the Division of Public Health (DPH) or the WSLH. Confirmatory testing for other positive arboviruses (LAC, EEE, SLE) will continue to be performed by the CDC.

Fee-for service: The WSLH will again provide fee-for-service testing for arbovirus infections. Meeting clinical criteria is **not** required to submit serum or CSF specimens to the WSLH for fee-for-service arboviral screening.

Fee-exempt testing: Fee-exempt testing for arbovirus infection will be offered to clinicians whose patients meet one of the following criteria:

- Confirmatory testing of positive test results performed at laboratories other than the WSLH;
- The patient is over 65 years old with signs and symptoms of meningitis (fever, headache and stiff neck) or encephalitis (fever, headache, and altered mental status ranging from confusion to coma) with no other laboratory diagnosis; or
- The patient has a diagnosis of Guillain-Barré syndrome and no other laboratory diagnosis.
- The local health department may request fee-exempt testing be performed if the case-patient lacks insurance coverage or the ability to pay.

Collection and shipping of clinical specimens to the WSLH:

- At least 3-7 mls of serum or CSF in sterile screw-capped vials should be submitted on cold packs, accompanied by the WSLH CDD requisition form B (not attached)

- Specimens submitted to the WSLH for fee-exempt testing must include the WSLH "Enhanced Wisconsin Arbovirus Surveillance Form" [Attachment A]. **Please note** that this form has been revised since 2005; extraneous information, including clinical signs and symptoms, has been deleted and the shipping instructions appear more prominently.

- It is **essential** that the lab requisition forms be as complete as possible including **the patient name, city, date of birth, specimen type, submitting agency, and collection date**.

Reporting and Follow-Up of Positive Human Arbovirus Test Results

- The WSLH reports positive human arboviral test results by telephone or fax to DPH.

- The WSLH mails a paper report of all test results to the sample submitter.

- The DPH will promptly report, by phone or email, positive human arboviral test results to the local health department (LHD) where the patient resides.

- If it is determined that the patient does not reside within the jurisdiction of the LHD, that health department will forward the case to the appropriate LHD for follow up.

- The LHD will be asked to contact the physician and the submitting laboratory or hospital infection control staff regarding these test results.

- The LHD will ensure the test results have been relayed to the healthcare provider, patient, and hospital infection control staff before any information will be released to the public.

- With the exception of the first human cases of West Nile virus infection identified in the state for the season, an unusual outbreak of cases, or introduction of a new arbovirus into the state, any of which my prompt a statewide press release, the LHD will decide whether on subsequent positive cases to release limited information. The DPH can provide the LHD with a press release template.

- The only information DPH will release regarding positive human cases includes acknowledgement of the positive case, the onset date of the illness, and county of residence of the positive individual.

- **No demographic** information (such as sex, age, or hospitalization status of a patient) will be released. Protection of an individual's privacy is of paramount concern when releasing information on human infections. The same criteria will apply should any individuals succumb to the disease.

- If WNV, once the patient, the physician/healthcare provider, submitting laboratory, and/or hospital infection control staff are informed of the findings, the county of residence of the case will be added to the DHFS WNV web site with the next update.

- LHD staff will collect the follow-up information requested by the DPH on Arboviral Infection Follow-up Form [Form CDES 103, Attachment B]. Form CDES 103 is also available on the EPI NET. **Please note** that this form has been revised since 2005. If old forms are used for case follow-up, they will be returned and the submitter will be asked to complete the 2006 revised follow-up form.

Case Definition of Human Arbovirus Infections (EEE, LAC, SLE, WNV)

Please note: The DPH will follow current CDC case definitions and classifications of arbovirus infections including West Nile virus encephalitis and West Nile fever.

Cases of arboviral disease will now be classified as either **neuroinvasive** or **non-neuroinvasive**, according to the following criteria:

Neuroinvasive disease requires the presence of fever and at least one of the following:

- acutely altered mental status
- other acute signs of central OR peripheral neurologic dysfunction such as paresis, paralysis, movement disorders, palsies, or sensory deficits
- pleocytosis (increased WBC count) in CSF associated with illness clinically compatible with meningitis (stiff neck, headache)

Common Clinical Description:
Meningitis characterized by fever, headache, stiff neck, and pleocytosis or encephalitis characterized by fever, headache, and altered mental status ranging from confusion to coma with or without additional signs of brain dysfunction (e.g., paresis or paralysis, cranial nerve palsies, sensory deficits, abnormal reflexes, generalized convulsions, and abnormal movements).

Non-Neuroinvasive disease (West Nile Fever) requires, at minimum:

- the presence of fever (as measured by the patient or clinician)
- the absence of neuroinvasive disease (above)
- the absence of a more likely clinical explanation for the illness

Common Clinical Description:
A non-specific, self-limited, febrile illness characterized by the acute onset of fever, headache, arthralgias, myalgias, and fatigue.

Laboratory Criteria for Diagnosis
Cases of arboviral disease are also classified as either **confirmed** or **probable**, according to the following laboratory criteria, specified in the CDC case description:

Confirmed case:

- Fourfold or greater change in antibody titer
- Isolation of virus or demonstration of specific viral antigen in tissue, blood, CSF
- IgM antibodies in CSF
- IgM antibodies in sera AND confirmed by other assay (such as PRNT)

Probable case:

- Stable, but elevated antibody titer
- IgM antibodies in sera with no confirmatory testing

A **case** must meet one or more of the above **clinical criteria AND** one or more of the above **laboratory criteria.** This determination will be made by DPH.

A complete description of the West Nile virus case definition is available at:
http://www.cdc.gov/ncidod/dvbid/westnile/clinicians/surveillance.htm#casedef